

Ser. No. 09/744,514
Response to Office Action of 27 May 2003
Atty Docket 117040-18

AMENDMENTS TO THE CLAIMS

1. (previously amended) An element for fixing a first bone fragment, in particular a bone fragment in an ankle joint fracture, to an associated second bone fragment, said fixing element comprising:

an elongate spreading body and an elongate fixing body which can be introduced into aligned bores in the bone fragments and which has a proximal first portion which is to be introduced into the first bone fragment, a distal second portion which adjoins the first portion and which is to be introduced into the second bone fragment, and a cavity which extends substantially over its length, wherein the fixing body is adapted to be introduced completely into the bores, it can be spread open transversely with respect to its longitudinal direction by a wedge action at least in the region of its two ends for connection to the respective bone fragment by proximal introduction of the spreading body into the cavity and after substantially complete introduction of the spreading body into the cavity it is of a greater dimension transversely with respect to its longitudinal direction at the distal end of the second portion than at the proximal end of the second portion, characterised in that the fixing body is adapted to be spread open substantially over its entire length.

2. (previously amended) The fixing element as set forth in claim 1 characterised in that the fixing body comprises at least two body portions which adjoin each other in the peripheral direction and which are connected together movably sufficiently for spreading open.

3. (previously amended) The fixing element of claim 1 wherein the operative surfaces of the fixing body and the spreading body, which co-operate for spreading open the fixing body, are of such a configuration that spreading of the second portion begins at the distal end of the second portion.

4. (previously amended) The fixing element as set forth in claim 3 characterised in that the co-operating operative surfaces of the fixing body and the spreading body are of such a

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configuration that at least one first part of the first portion is spread open before the second portion is spread open.

5. (previously amended) The fixing element as set forth in claim 4 characterised in that the first part is arranged in the region of the proximal end of the first portion.

6. (previously amended) The fixing element of claim 5 wherein the first portion is pivotably connected at its distal end by way of at least one leg element to the proximal end of the second portion,

wherein the fixing body and the spreading body are of such a configuration that, upon introduction of the spreading body, the distal end of the first portion is substantially completely spread open before in succession in a first step a part of the second portion is spread open and in a second step the proximal end of the second portion is spread open, or that upon introduction of the spreading body the proximal end of the second portion is substantially completely spread open before in succession in a first step a part of the first portion is spread open and in a second step the distal end of the first portion is spread open, and

the leg element is of such a configuration and arrangement that the longitudinal spacing between the first and second portions is reduced during the second step.

7. (previously amended) The fixing element of claim 6 wherein after the spreading body is introduced into the cavity, the fixing body is of a larger dimension transversely with respect to its longitudinal direction at the proximal end of the first portion than at the distal end of the first portion.

8. (previously amended) The fixing element of claim 7 wherein in the non-spread condition the first portion is of a greater dimension transversely with respect to its longitudinal direction than the second portion.

9. (previously amended) The fixing element of claim 8 wherein projections intended to penetrate into the bone are provided at the surface of the fixing body which is towards the bone.

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10. (previously amended) The fixing element of claim 9 wherein at least the fixing body comprises a bioresorbable material.

11. (previously amended) The fixing element as set forth in claim 10 wherein the fixing body comprises a polylactide which is reinforced in regions involving a tensile loading by tension-resistant, in particular bioresorbable, fibers and/or fiber cloth.

12. (previously presented) The fixing element of claim 2 wherein the operative surfaces of the fixing body and the spreading body, which co-operate for spreading open the fixing body, are of such a configuration that spreading of the second portion begins at the distal end of the second portion.

13. (previously presented) The fixing element as set forth in claim 12 wherein the co-operating operative surfaces of the fixing body and the spreading body are of such a configuration that at least one first part of the first portion is spread open before the second portion is spread open.

14. (previously presented) The fixing element of claim 13 wherein the first part is arranged in the region of the proximal end of the first portion.

15. (previously presented) The fixing element of claim 14 wherein the first portion is pivotably connected at its distal end by way of at least one leg element to the proximal end of the second portion,

wherein the fixing body and the spreading body are of such a configuration that, upon introduction of the spreading body, the distal end of the first portion is substantially completely spread open before in succession in a first step a part of the second portion is spread open and in a second step the proximal end of the second portion is spread open, or that upon introduction of the spreading body the proximal end of the second portion is substantially completely spread open before in succession in a first step a part of the first portion is spread open and in a second step the distal end of the first portion is spread open, and

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the leg element is of such a configuration and arrangement that the longitudinal spacing between the first and second portions is reduced during the second step.

16. (previously presented) The fixing element of claim 15 wherein after the spreading body is introduced into the cavity, the fixing body is of a larger dimension transversely with respect to its longitudinal direction at the proximal end of the first portion than at the distal end of the first portion.

17. (previously presented) The fixing element of claim 16 wherein in the non-spread condition the first portion is of a greater dimension transversely with respect to its longitudinal direction than the second portion.

18. (currently amended) The fixing element of claim 17 wherein projections intended to penetrate into the bone are provided at the surface of the fixing body which is towards the bone ~~the~~.

19. (previously presented) The fixing element of claim 18 wherein the fixing body comprises a bioresorbable material.

20. (previously presented) The fixing element of claim 1 wherein the fixing body comprises a bioresorbable material.

21. (previously presented) The fixing element as set forth in claim 19 wherein the fixing body comprises a polylactide which is reinforced in regions involving a tensile loading by tension-resistant, in particular bioresorbable, fibers and/or fiber cloth.

22. (previously presented) The fixing element as set forth in claim 20 wherein the fixing body comprises a polylactide which is reinforced in regions involving a tensile loading by tension-resistant, in particular bioresorbable, fibers and/or fiber cloth.

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23. (previously presented) An element for fixing a first bone fragment to an associated second bone fragment from a fracture, especially an ankle joint fracture, each bone fragment having an aligned bore therein, the fixing element comprising:

an elongate fixing body, sized to be introduced into the aligned bores such that a first portion defining a proximal end thereof is introduced into the first bone fragment and a second portion defining a distal end thereof is introduced into the second bone fragment, a proximal end of the second portion adjoining a distal end of the first portion, and the fixing body having an operative surface defined by a cavity extending substantially longitudinally therethrough; and

an elongate spreading body for longitudinal introduction into the cavity at the proximal end, an operative surface of the spreading body defined by an external surface thereof, the fixing body operative surface and the spreading body operative surface co-acting to spread open the fixing body transversely with respect to the longitudinal direction thereof by a wedge action for connection to the respective bone fragments, such that after substantially complete introduction of the spreading body into the cavity, the second portion of the fixing body has a greater dimension transversely with respect to the longitudinal direction thereof at the distal end of the second portion than at the proximal end thereof, the fixing body being adapted to be spread open substantially over its entire length.